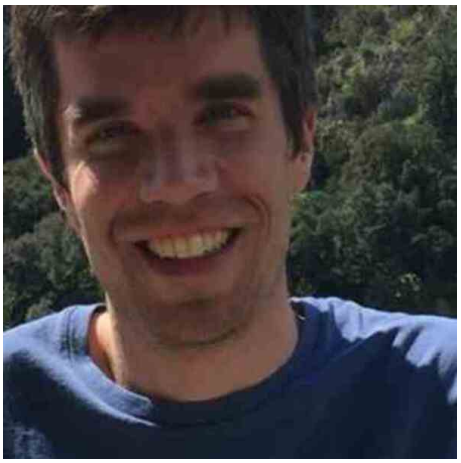
Talk by Dr. Zoefel "Entrained brain rhythms in speech processing"

Desde el Jue, 15/02/2024 - 15:30 hasta

Seminar Benedikt Zoefel, CNRS, Toulouse



Date, place, Time: February 16th, Sala de Conferencias 1, CIMCYC, 15h.

Title: Entrained brain rhythms in speech processing: causality, processing modes, and the cerebellum

Abstract: Several of current models of speech perception assume an important role of endogenously rhythmic brain activity for the processing of speech. However, demonstrating a causal role of brain rhythms for such functions can be challenging, due to alternative processes that can produce similarly rhythmic patterns in perceptual or neural data. In this talk, I will summarise results from experiments using acoustic and electric entrainment to reveal endogenous brain rhythms causally modulating auditory and speech perception. Most of these are based on the notion that rhythmic brain responses are more likely to involve endogenous rhythms if they persist after the offset of a rhythmic stimulus. I will further demonstrate that such "entrainment echoes" have preferred stimulus rates and involve the cerebellum. In the final part of the talk, I will show that neural entrainment during sustained auditory attention undergoes slow, periodic fluctuations around ~0.07 Hz and alternates with periods of strong alpha oscillations. These opposing processing modes were strikingly similar to those observed in non-human primates, suggesting a general attentional mechanism that is conserved across species.